HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties, North Dakota

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and " Keys to Soil Taxonomy"' (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at east one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Ab:							
ABERDEEN LOAM	ABERDEEN	No	---	---	---	---	---
	COLVIN	Yes	depression	2B3,3	YES	NO	YES
	EXLINE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
Ae:							
ABERDEEN-EXLINE LOAMS	ABERDEEN	No	---	---	---	---	---
	EXLINE	No	---	---	---	---	---
	COLVIN, SALINE	Yes	depression	2B3,3	YES	NO	YES
	GARDENA	No	---	---	---	---	---
Ar:							
ARVESON SANDY LOAM	ARVESON	Yes	depression	2B3	YES	NO	NO
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HAMAR SL	Yes	depression	2B3	YES	NO	NO
As:							
ARVILLA SANDY LOAM	ARVILLA	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
AtA:							
ARVILLA SANDY LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLOPES	ARVILLA	No	---	---	---	---	---
	ARVILLA GR. SUBSTRATUM	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
AtB:							
ARVILLA SANDY LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLOPES	ARVILLA, GRAVELLY SUBSTRATUM	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	SPOTTSWOOD	No	---	---	---	---	---
AvA:							
ARVILLA SANDY LOAM, SANDY SUBSTRATUM, 0 TO 3 PERCENT SL OPES	ARVILLA	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	ARVILLA GR. SUBSTRATUM	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
AvB:							
ARVILLA SANDY LOAM, SANDY SUBSTRATUM, 3 TO 6 PERCENT SL OPES	ARVILLA	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	ARVILLA GR. SUBSTRATUM	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	SPOTTSWOOD	No	---	---	---	---	---
AxC:							
ARVILLA-SIOUX SANDY LOAMS, 6 TO 9 PERCENT SLOPES	ARVILLA	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	SPOTTSWOOD	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BaA:							
BARNES LOAM, 0 TO 3 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
BaB:							
BARNES LOAM, 3 TO 6 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
BaC:							
BARNES LOAM, 6 TO 9 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	3,2B3	YES	NO	YES
BbA:							
BARNES-SVEA LOAMS, 0 TO 3 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
BbB:							
BARNES-SVEA LOAMS, 3 TO 6 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	BUSE	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
BcB:							
BARNES-SVEA STONY LOAMS, 3 TO 6 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BdC:							
BARNES-SVEA-BUSE LOAMS, 6 TO 9 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
BeC:							
BARNES-SVEA-BUSE STONY LOAMS, 6 TO 9 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
Bg:							
BEARDEN SILT LOAM, SALINE	BEARDEN	No	---	---	---	---	---
	BEARDEN, NONSALINE	No	---	---	---	---	---
	GLYNDON, SALINE	No	---	---	---	---	---
	ABERDEEN	No	---	---	---	---	---
	COLVIN, SALINE	Yes	depression	2B3	YES	NO	NO
	GARDENA	No	---	---	---	---	---
Bh:							
BINFORD SANDY LOAM	BINFORD	No	---	---	---	---	---
	WALUM	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
BkA:							
BINFORD SANDY LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLOPES	BINFORD	No	---	---	---	---	---
	BINFORD, <40% GR. SUBSTRA.	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	WALUM	No	---	---	---	---	---
BkB:							
BINFORD SANDY LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLOPES	BINFORD	No	---	---	---	---	---
	BINFORD, <40% GR. SUBSTRA.	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BlA:							
BINFORD SANDY LOAM, SANDY SUBSTRATUM, 0 TO 3 PERCENT SL OPES	BINFORD	No	---	---	---	---	---
	BINFORD, >40% GR. SUBSTRA.	No	---	---	---	---	---
	WALUM	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
BlB:							
BINFORD SANDY LOAM, SANDY SUBSTRATUM, 3 TO 6 PERCENT SL OPES	BINFORD	No	---	---	---	---	---
	BINFORD, >40% GR. SUBSTRA.	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VANG	No	---	---	---	---	---
BmC:							
BINFORD-COE SANDY LOAMS, 6 TO 9 PERCENT SLOPES	BINFORD	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
BmD:							
BINFORD-COE SANDY LOAMS, 9 TO 12 PERCENT SLOPES	BINFORD	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	TOLNA	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
Bn:							
BORUP SILT LOAM	BORUP	Yes	depression	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---
	BORUP VPD	Yes	depression	2B3,3	YES	NO	YES
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
Bo:							
BORUP AND MARYSLAND SILT LOAMS, VERY WET	BORUP	Yes	depression	2B3,3	YES	NO	YES
	MARYSLAND	Yes	depression	2B3,3	YES	NO	YES
	BORUP, POORLY DRAINED	Yes	depression	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BpB:							
BORUP AND VALLERS LOAMS, 3 TO 6 PERCENT SLOPES	BORUP	Yes	drainageway	2B3	YES	NO	NO
	VALLERS	Yes	drainageway	2B3	YES	NO	NO
	COLVIN	Yes	drainageway	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	VALLERS, SALINE	Yes	drainageway	2B3	YES	NO	NO
	GLYNDON	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
BrB:							
BRANTFORD LOAM, 3 TO 6 PERCENT SLOPES	BRANTFORD	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
BsA:							
BRANTFORD LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLO PES	BRANTFORD	No	---	---	---	---	---
	BRANTFORD, <40% GR. SUBSTRA.	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	COE	No	---	---	---	---	---
BsB:							
BRANTFORD LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLO PES	BRANTFORD	No	---	---	---	---	---
	BRANTFORD, <40% GR. SUBSTRA.	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	TOLNA	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
BtA:							
BRANTFORD LOAM, SANDY SUBSTRATUM, 0 TO 3 PERCENT SLOPES	BRANTFORD	No	---	---	---	---	---
	BRANTFORD, >40% GR. SUBSTRA.	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
BtB:							
BRANTFORD LOAM, SANDY SUBSTRATUM, 3 TO 6 PERCENT SLOPES	BRANTFORD	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	BRANTFORD >40% GR. SUBSTRA.	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BuC:							
BRANTFORD-COE LOAMS, 6 TO 9 PERCENT SLOPES	BRANTFORD	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
Bv:							
BRANTFORD-KENSAL LOAMS	BRANTFORD	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
BwE:							
BUSE-BARNES LOAMS, 9 TO 30 PERCENT SLOPES	BUSE	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	3,2B3	YES	NO	YES
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	VALLERS	Yes	drainageway	2B3	YES	NO	NO
BxD:							
BUSE-EDGELEY LOAMS, 9 TO 30 PERCENT SLOPES	BUSE	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	KLOTEN	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
ByE:							
BUSE AND KLOTEN LOAMS, 6 TO 25 PERCENT SLOPES	BARNES	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	KLOTEN	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
	CAVOUR	No	---	---	---	---	---
BzD:							
BUSE, SIOUX, AND ZELL SOILS, 3 TO 30 PERCENT SLOPES	BUSE	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	ZELL	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
Ca:							
CATHAY LOAM	CATHAY	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	MIRANDA	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	LARSON	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
ChA:							
CATHAY-HEIMDAL LOAMS, 0 TO 3 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	CATHAY	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	FRAM	No	---	---	---	---	---
	LARSON	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	MIRANDA	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
ChB:							
CATHAY-HEIMDAL LOAMS, 3 TO 6 PERCENT SLOPES	CATHAY	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	MIRANDA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	LARSON	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	FRAM	No	---	---	---	---	---
Cm:							
CATHAY-LARSON LOAMS	CATHAY	No	---	---	---	---	---
	LARSON	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	MIRANDA	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
Cn:							
CAVOUR-CRESBARD LOAMS	CAVOUR	No	---	---	---	---	---
	CRESBARD	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	SVEA	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
Co:							
CAVOUR AND VALLERS STONY CLAY LOAMS	CAVOUR	No	---	---	---	---	---
	VALLERS	Yes	flood plain	2B3	YES	NO	NO
	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	CRESBARD	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO
	MIRANDA	No	---	---	---	---	---
CpB:							
CAVOUR CLAY LOAM, SHALY VARIANT, 3 TO 6 PERCENT SLOPES	CAVOUR	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	KLOTEN	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
CrA:							
CLAIRE LOAMY COARSE SAND, 0 TO 3 PERCENT SLOPES	CLAIRE	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HAMAR	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
CrB:							
CLAIRE LOAMY COARSE SAND, 3 TO 6 PERCENT SLOPES	CLAIRE	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	HAMAR	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
Cs:							
CLAIRE COARSE SANDY LOAM	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	CLAIRE, 3 - 6% SLOPES	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HAMAR	Yes	depression	2B3	YES	NO	NO
Ct:							
CLAIRE-LOHNES-HAMAR LOAMY COARSE SANDS	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	HAMAR	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	FOSSUM LS	Yes	flat	2B2	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
	WYRENE	No	---	---	---	---	---
Cu:							
CLONTARF SANDY LOAM	CLONTARF	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
CvB:							
COE SANDY LOAM, 0 TO 6 PERCENT SLOPES	COE	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	BINFORD	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
CvD:							
COE SANDY LOAM, 6 TO 25 PERCENT SLOPES	COE	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	BINFORD	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
Cw:							
COLVIN SILTY CLAY LOAM	COLVIN	Yes	flat	2B3	YES	NO	NO
	BEARDEN	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	BORUP VPD	Yes	depression	2B3,3	YES	NO	YES
	COLVIN VPD	Yes	depression	2B3,3	YES	NO	YES
Cx:							
COLVIN SILTY CLAY LOAM, SALINE	COLVIN	Yes	flat	2B3	YES	NO	NO
	COLVIN, NONSALINE	Yes	flat	2B3	YES	NO	NO
	BEARDEN, SALINE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	BORUP VPD	Yes	depression	2B3,3	YES	NO	YES
	COLVIN VPD	Yes	depression	2B3,3	YES	NO	YES

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Cy:							
COLVIN SILTY CLAY LOAM, VERY WET	COLVIN	Yes	depression	2B3,3	YES	NO	YES
	COLVIN, SALINE	Yes	depression	2B3	YES	NO	NO
	SOUTHAM	Yes	depression	2B3,3	YES	NO	YES
	BEARDEN	No	---	---	---	---	---
	MARYSLAND	Yes	depression	2B3	YES	NO	NO
Cz:							
CRESBARD-CAVOUR LOAMS	CRESBARD	No	---	---	---	---	---
	CAVOUR	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	SVEA	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
DvA:							
DIVIDE LOAM, 0 TO 3 PERCENT SLOPES	DIVIDE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	RENSHAW	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
DvB:							
DIVIDE LOAM, 3 TO 6 PERCENT SLOPES	DIVIDE	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
Dw:							
DIVIDE LOAM, SALINE	DIVIDE	No	---	---	---	---	---
	DIVIDE, NONSALINE	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	WARSING	No	---	---	---	---	---
	MARYSLAND, SALINE	Yes	flat	2B3	YES	NO	NO
	VALLERS, SALINE	Yes	flat	2B3	YES	NO	NO
Dx:							
DIVIDE LOAM, GRAVELLY SUBSTRATUM	DIVIDE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	WARSING	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	DIVIDE, SALINE	No	---	---	---	---	---
Dy:							
DIVIDE LOAM, SANDY SUBSTRATUM	DIVIDE	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	GLYNDON	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---

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HYDRIC SOILS LIST
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Dz:							
DIVIDE LOAM, TILL SUBSTRATUM	DIVIDE	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	WARSING	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
EaA:							
ECKMAN LOAM, 0 TO 3 PERCENT SLOPES	ECKMAN	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---
EaB:							
ECKMAN LOAM, 3 TO 8 PERCENT SLOPES	ECKMAN	No	---	---	---	---	---
	ZELL	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---
Eb:							
EDGELEY LOAM	EDGELEY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	EDGELEY VAR.	No	---	---	---	---	---
	KLOTEN	No	---	---	---	---	---
EcB:							
EDGELEY AND CAVOUR LOAMS, 3 TO 6 PERCENT SLOPES	EDGELEY	No	---	---	---	---	---
	CAVOUR	No	---	---	---	---	---
	KLOTEN	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
	CAVOUR VAR.	No	---	---	---	---	---
	EDGELEY VAR.	No	---	---	---	---	---
Ed:							
EDGELEY LOAM, GRAVELLY VARIANT	EDGELEY VARIANT	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	EDGELEY VAR. /BEDROCK	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	SVEA VAR.	No	---	---	---	---	---
EeA:							
EGELAND SANDY LOAM, 0 TO 3 PERCENT SLOPES	EGELAND	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
EeC:							
EGELAND SANDY LOAM, 6 TO 12 PERCENT SLOPES	EGELAND	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
Eg:							
EGELAND SANDY LOAM, SANDY SUBSTRATUM	EGELAND	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
EhA:							
EGELAND FINE SANDY LOAM, TILL SUBSTRATUM, 0 TO 3 PERCEN T SLOPES	EGELAND, LOAMY SUBSTRATUM	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	EGELAND	No	---	---	---	---	---
	EMBDEN, LOAMY SUBSTRATUM	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
EhB:							
EGELAND FINE SANDY LOAM, TILL SUBSTRATUM, 3 TO 6 PERCEN T SLOPES	EGELAND, LOAMY SUBSTRATUM	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	EGELAND	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	EMBDEN, LOAMY SUBSTRATUM	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
EmC:							
EGELAND-EMBDEN SANDY LOAMS, TILL SUBSTRATUM, 6 TO 9 PER CENT SLOPES	EGELAND	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	EMRICK	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
EnA:							
EMBDEN SANDY LOAM, 0 TO 3 PERCENT SLOPES	EMBDEN	No	---	---	---	---	---
	EGELAND	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
EoB:							
EMBDEN-EGELAND SANDY LOAMS, 3 TO 6 PERCENT SLOPES	EMBDEN	No	---	---	---	---	---
	EGELAND	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
EsA:							
EMBDEN, SWENODA, AND HEIMDAL FINE SANDY LOAMS, 0 TO 3 P ERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	ESMOND	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
EsB:							
EMBDEN, SWENODA, AND HEIMDAL FINE SANDY LOAMS, 3 TO 6 P ERCENT SLOPES	SWENODA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	ESMOND	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
Et:							
EMRICK SANDY LOAM	EMRICK	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	HEIMDAL	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
Eu:							
EMRICK LOAM	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
EvD:							
ESMOND, COE, AND EMBDEN SOILS, 6 TO 25 PERCENT SLOPES	COE	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	BINFORD	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
Ew:							
EXLINE LOAM	EXLINE	No	---	---	---	---	---
	COLVIN, SALINE	Yes	flat	2B3	YES	NO	NO
	ABERDEEN	No	---	---	---	---	---
Fa:							
FARGO AND NUTLEY SILTY CLAY LOAMS	FARGO	Yes	lake plain	2B3	YES	NO	NO
	NUTLEY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	PERELLA	Yes	depression	2B3,3	YES	NO	YES
	FARGO, TILL SUBSTRATUM	Yes	lake plain	2B3	YES	NO	NO
	NUTLEY, TILL SUBSTRATUM	No	---	---	---	---	---
	HEGNE, SALINE	Yes	lake plain	2B3	YES	NO	NO
Fd:							
FORDVILLE LOAM	FORDVILLE	No	---	---	---	---	---
	SPOTTSWOOD	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Fm:							
FOSSUM SANDY LOAM	FOSSUM	Yes	flat	2B3	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
	HAMAR PD	Yes	flat	2B3	YES	NO	NO
	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
Fo:							
FOSSUM LOAM	FOSSUM	Yes	flat	2B3	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	HAMAR	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
Fp:							
FOSSUM AND HAMAR SANDY LOAMS	FOSSUM	Yes	depression	2B3	YES	NO	NO
	HAMAR	No	---	---	---	---	---
	ARVESON	Yes	depression	2B3	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
	HAMAR SL, PD	Yes	flat	2B3	YES	NO	NO
FrA:							
FRAM LOAM, 0 TO 3 PERCENT SLOPES	FRAM	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
FrB:							
FRAM LOAM, 3 TO 6 PERCENT SLOPES	FRAM	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
Fs:							
FRAM LOAM, SALINE	FRAM	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	VALLERS, SALINE	Yes	flat	2B3	YES	NO	NO
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	FRAM, NONSALINE	No	---	---	---	---	---
Fw:							
FRAM AND WYNDMERE FINE SANDY LOAMS	FRAM	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	TIFFANY	Yes	depression	3,2B3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
GaA:							
GARDENA LOAM, 0 TO 3 PERCENT SLOPES	GARDENA	No	---	---	---	---	---
	ECKMAN	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
GaB:							
GARDENA LOAM, 3 TO 6 PERCENT SLOPES	GARDENA	No	---	---	---	---	---
	GLYNDON	No	---	---	---	---	---
	ECKMAN	No	---	---	---	---	---
Gd:							
GLYNDON LOAM	GLYNDON	No	---	---	---	---	---
	BORUP	Yes	lake plain	2B3	YES	NO	NO
	GLYNDON, SALINE	No	---	---	---	---	---
	LALLIE	Yes	lake plain	2B3	YES	NO	NO
	GARDENA	No	---	---	---	---	---
Ge:							
GLYNDON LOAM, SALINE	GLYNDON	No	---	---	---	---	---
	BORUP, SALINE	Yes	lake plain	2B3	YES	NO	NO
	LALLIE, SALINE	Yes	lake plain	2B3	YES	NO	NO
	GLYNDON, NONSALINE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
Gp:							
GRAVEL PIT	GRAVEL PIT	No	---	---	---	---	---
Ha:							
HAMAR LOAMY COARSE SAND	HAMAR	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	WYRENE	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B2	YES	NO	NO
	HAMAR LCOS, PD	Yes	depression	2B2	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
Hb:							
HAMAR LOAMY SAND	HAMAR	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B2	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	HAMAR LS, PD	Yes	depression	2B2	YES	NO	NO
	HECLA	No	---	---	---	---	---
Hc:							
HAMAR COARSE SANDY LOAM	HAMAR	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	LOHNES	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
	HAMAR SL, PD	Yes	depression	2B3	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	WYRENE	No	---	---	---	---	---
Hd:							
HAMAR SANDY LOAM	HAMAR	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	HAMAR SL, PD	Yes	depression	2B3	YES	NO	NO
	HECLA	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
HeA:							
HAMERLY LOAM, 0 TO 3 PERCENT SLOPES	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	SVEA	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	BARNES	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
HeB:							
HAMERLY LOAM, 3 TO 6 PERCENT SLOPES	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	BARNES	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
Hf:							
HAMERLY LOAM, SALINE	HAMERLY	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	CAVOUR	No	---	---	---	---	---
	CRESBARD	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	VALLERS, SALINE	Yes	flat	2B3	YES	NO	NO
	SVEA	No	---	---	---	---	---
HgA:							
HAMERLY-SVEA LOAMS, 0 TO 3 PERCENT SLOPES	HAMERLY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	BARNES	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
HgB:							
HAMERLY-SVEA LOAMS, 3 TO 6 PERCENT SLOPES	HAMERLY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	BARNES	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
HhA:							
HECLA LOAMY SAND, 0 TO 3 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	HAMAR LS, PD	Yes	flat	2B2	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
HhB:							
HECLA LOAMY SAND, 3 TO 6 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	HAMAR LS, PD	Yes	flat	2B2	YES	NO	NO
	LOHNES	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
HkA:							
HECLA SANDY LOAM, 0 TO 3 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	HAMAR SL, PD	Yes	flat	2B3	YES	NO	NO
	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
HkB:							
HECLA SANDY LOAM, 3 TO 6 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HAMAR SL, PD	Yes	flat	2B3	YES	NO	NO
	LOHNES	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
HlB:							
HECLA-DICKEY FINE SANDY LOAMS, 3 TO 6 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	HAMAR FSL, PD	Yes	flat	2B3	YES	NO	NO
	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	KRATKA FSL, PD	Yes	flat	2B3	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
Hm:							
HECLA-HAMAR LOAMY SANDS	HECLA	No	---	---	---	---	---
	HAMAR	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	FOSSUM LS	Yes	flat	2B2	YES	NO	NO
	HAMAR LS, PD	Yes	depression	2B2	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
HnA:							
HECLA-MADDOCK LOAMY SANDS, 0 TO 3 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HAMAR LS, PD	Yes	flat	2B2	YES	NO	NO
	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	BLOWN-OUT LAND	No	---	---	---	---	---
HnB:							
HECLA-MADDOCK LOAMY SANDS, 3 TO 6 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HAMAR LS, PD	Yes	flat	2B2	YES	NO	NO
	CLAIRE	No	---	---	---	---	---
	BLOWN-OUT LAND	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
HoA:							
HEIMDAL SANDY LOAM, 0 TO 3 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	EMRICK	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	WYARD	No	---	---	---	---	---
HoB:							
HEIMDAL SANDY LOAM, 3 TO 6 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	TIFFANY	Yes	depression	3,2B3	YES	NO	YES
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	WYARD	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
HoC:							
HEIMDAL SANDY LOAM, 6 TO 9 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	EGELAND	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
HpA:							
HEIMDAL LOAM, 0 TO 3 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	FRAM	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
HpB:							
HEIMDAL LOAM, 3 TO 6 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	EMRICK	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
HpC:							
HEIMDAL LOAM, 6 TO 9 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
HrD:							
HEIMDAL-EMBDEN FINE SANDY LOAMS, 9 TO 15 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	KRATKA	Yes	flat	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
HrE:							
HEIMDAL-EMBDEN FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPE S	HEIMDAL	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
HsA:							
HEIMDAL-EMRICK LOAMS, 0 TO 3 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
HsB:							
HEIMDAL-EMRICK LOAMS, 3 TO 6 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
HtC:							
HEIMDAL-EMRICK-ESMOND LOAMS, 3 TO 9 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	FRAM	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
HtD:							
HEIMDAL-EMRICK-ESMOND LOAMS, 9 TO 15 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	FRAM	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
HtE:							
HEIMDAL-EMRICK-ESMOND LOAMS, 15 TO 25 PERCENT SLOPES	HEIMDAL	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
Ke:							
KENSAL LOAM	KENSAL	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
Kf:							
KENSAL LOAM, SANDY SUBSTRATUM	KENSAL	No	---	---	---	---	---
	KENSAL, GRAVELLY SUBSTRATUM	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
KoE:							
KLOTEN LOAM, 9 TO 30 PERCENT SLOPES	KLOTEN	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
KsE:							
KLOTEN, SIOUX, AND EDGELEY SOILS, 12 TO 25 PERCENT SLOP ES	KLOTEN	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	COE	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
Kt:							
KRATKA FINE SANDY LOAM	KRATKA	Yes	flat	2B3	YES	NO	NO
	EMBDEN	No	---	---	---	---	---
	TIFFANY	Yes	depression	3,2B3	YES	NO	YES
	HECLA	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	ULEN	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
La:							
LADELLE SILTY CLAY LOAM	LADELLE	No	---	---	---	---	---
	LAMOURE	Yes	channel	2B3	YES	NO	NO
	LAPRAIRIE	No	---	---	---	---	---
	CHANNEL	---	---	---	---	---	---
Lb:							
LALLIE SILTY CLAY LOAM	LALLIE	Yes	lake plain	2B3,3	YES	NO	YES
	BEARDEN	No	---	---	---	---	---
	LALLIE, SALINE	Yes	lake plain	2B3	YES	NO	NO
	COLVIN	Yes	lake plain	2B3	YES	NO	NO
	MANFRED	Yes	lake plain	3,2B3	YES	NO	YES
Le:							
LAMOURE SILTY CLAY LOAM	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	CHANNEL	---	---	---	---	---	---
	LAMOURE, SALINE	Yes	flood plain	2B3	YES	NO	NO
	LADELLE	No	---	---	---	---	---
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO
	LALLIE VPD	Yes	oxbow	2B3,3	YES	NO	YES
Lm:							
LAMOURE SILTY CLAY LOAM, SALINE	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	LADELLE	No	---	---	---	---	---
	CHANNEL	---	---	---	---	---	---
	LAMOURE, NONSALINE	Yes	flood plain	2B3	YES	NO	NO
	RYAN	Yes	drainageway	2B3	YES	NO	NO
Ln:							
LA PRAIRIE SILT LOAM	LA PRAIRIE	No	---	---	---	---	---
	LAMOURE	Yes	channel	2B3	YES	NO	NO
	CHANNEL	---	---	---	---	---	---
	LADELLE	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
Lp:							
LA PRAIRIE-LAMOURE COMPLEX	CHANNEL	---	---	---	---	---	---
	LA PRAIRIE	No	---	---	---	---	---
	LAMOURE	Yes	channel	2B3	YES	NO	NO
	LADELLE	No	---	---	---	---	---
	RAUVILLE	Yes	oxbow	4,2B3,3	YES	YES	YES
	LAMOURE, SALINE	Yes	flood plain	2B3	YES	NO	NO
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Lr:							
LARSON LOAM	LARSON	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	CATHAY	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	MIRANDA	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
Ls:							
LEMERT SANDY LOAM	LEMERT	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	LETCHER	No	---	---	---	---	---
	BORUP PD	Yes	flat	2B3	YES	NO	NO
Lt:							
LETCHER SANDY LOAM	LETCHER	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	KENSAL	No	---	---	---	---	---
	BORUP	Yes	flat	2B3	YES	NO	NO
	LEMERT	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	WALUM	No	---	---	---	---	---
Lu:							
LETCHER SANDY LOAM, TILL SUBSTRATUM	LETCHER	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	BORUP	Yes	flat	2B3	YES	NO	NO
	VALLERS	Yes	flat	2B3	YES	NO	NO
	LEMERT	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
Lv:							
LOHNES LOAMY COARSE SAND	LOHNES	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	HAMAR LS	Yes	flat	2B2	YES	NO	NO
	WYRENE	No	---	---	---	---	---
Lw:							
LOHNES COARSE SANDY LOAM	LOHNES	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	HAMAR SL	Yes	flat	2B3	YES	NO	NO
	WYRENE	No	---	---	---	---	---
Lx:							
LUDDEN SILTY CLAY	LUDDEN	Yes	flood plain	2B3	YES	NO	NO
	CHANNEL	---	---	---	---	---	---
	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	WAHPETON	No	---	---	---	---	---
	LUDDEN, SALINE	Yes	flat	2B3	YES	NO	NO
	RYAN	Yes	drainageway	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Lz:							
LUDDEN-LAMOURE COMPLEX	CHANNEL	---	---	---	---	---	---
	LAMOURE	Yes	channel	2B3	YES	NO	NO
	LUDDEN	Yes	flood plain	4,2B3	YES	YES	NO
	LAMOURE, SALINE	Yes	flood plain	2B3,4	YES	YES	NO
	LUDDEN, SALINE	Yes	flood plain	2B3,4	YES	YES	NO
	RAUVILLE	Yes	oxbow	4,2B3,3	YES	YES	YES
	RYAN	Yes	drainageway	2B3,4	YES	YES	NO
MaA:							
MADDOCK LOAMY SAND, 0 TO 3 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
MaB:							
MADDOCK LOAMY SAND, 3 TO 6 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
MaC:							
MADDOCK LOAMY SAND, 6 TO 9 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	HAMAR LS	Yes	flat	2B2	YES	NO	NO
	HEIMDAL	No	---	---	---	---	---
	KRATKA LS	Yes	flat	2B2	YES	NO	NO
MbA:							
MADDOCK SANDY LOAM, 0 TO 3 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
MbB:							
MADDOCK SANDY LOAM, 3 TO 6 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
MbC:							
MADDOCK SANDY LOAM, 6 TO 9 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	SERDEN	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	HECLA	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
MdB:							
MADDOCK-DICKEY SANDY LOAMS, 0 TO 6 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	HECLA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	BLOWN-OUT LAND	No	---	---	---	---	---
MdC:							
MADDOCK-DICKEY SANDY LOAMS, 6 TO 9 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	TOWNER	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	BLOWN-OUT LAND	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
MeD:							
MADDOCK-SERDEN LOAMY FINE SANDS, 9 TO 30 PERCENT SLOPES	MADDOCK	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HAMAR LFS, PD	Yes	flat	2B2	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	BLOWN-OUT LAND	No	---	---	---	---	---
MfD:							
MADDOCK-SERDEN-HECLA LOAMY FINE SANDS, 9 TO 25 PERCENT SLOPES	HECLA	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	SERDEN	No	---	---	---	---	---
	ESMOND	No	---	---	---	---	---
	HAMAR LFS, PD	Yes	flat	2B2	YES	NO	NO
	BLOWN-OUT LAND	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
Mg:							
MADE LAND	MADE LAND	No	---	---	---	---	---
	LANGHEI	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
Mh:							
MARSH	MARSH	Yes	depression	2B3,3	YES	NO	YES
	SOUTHAM	Yes	depression	2B3,3	YES	NO	YES
	WATER	Yes	depression	2B3,3	YES	NO	YES
Mm:							
MARYSLAND LOAM	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	BORUP	Yes	flat	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO

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HYDRIC SOILS LIST
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North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Mn:							
MARYSLAND AND ARVESON LOAMS	ARVESON	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	BORUP	Yes	flat	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	LETCHER	No	---	---	---	---	---
	STIRUM	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
MwC:							
MINNEWAUKAN LOAMY FINE SAND, 6 TO 9 PERCENT SLOPES	MINNEWAUKAN	Yes	beach	2B2	YES	NO	NO
	COE	No	---	---	---	---	---
	LALLIE	Yes	flat	3,2B3	YES	NO	YES
	SIOUX	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	ARVESON SALINE	Yes	flat	2B3	YES	NO	NO
	BUSE (MAUVAIS)	No	---	---	---	---	---
Mx:							
MIRANDA-CAVOUR CLAY LOAMS	MIRANDA	No	---	---	---	---	---
	CAVOUR	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	3,2B3	YES	NO	YES
	VALLERS	Yes	flat	2B3	YES	NO	NO
Os:							
OSAKIS SANDY LOAM	OSAKIS	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
Ot:							
OSAKIS SANDY LOAM, GRAVELLY SUBSTRATUM	OSAKIS	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	OSAKIS	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
Ou:							
OSAKIS SANDY LOAM, TILL SUBSTRATUM	OSAKIS	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
Ov:							
OVERLY SILTY CLAY LOAM	OVERLY	No	---	---	---	---	---
	BEARDEN	No	---	---	---	---	---
	WALSH	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
Pa:							
PARNELL SILTY CLAY LOAM	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	FRAM	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	SOUTHAM	Yes	depression	3,2B3	YES	NO	YES
	TONKA	Yes	depression	3,2B3	YES	NO	YES

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HYDRIC SOILS LIST
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Pe:							
PEAT	PEAT	Yes	fen	3,1	NO	NO	YES
	FRESHWATER MARSH	Yes	depression	3,2B3	YES	NO	YES
Pr:							
PERELLA SILTY CLAY LOAM	PERELLA	Yes	depression	2B3,3	YES	NO	YES
	BEARDEN	No	---	---	---	---	---
	COLVIN	Yes	flat	2B3	YES	NO	NO
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
Ra:							
RAUVILLE SILTY CLAY LOAM	RAUVILLE	Yes	oxbow	4,2B3	YES	YES	NO
	CHANNEL	---	---	---	---	---	---
	LAMOURE	Yes	flood plain	4,2B3	YES	YES	NO
	LUDDEN	Yes	flood plain	2B3,4	YES	YES	NO
ReA:							
RENSHAW LOAM, 0 TO 3 PERCENT SLOPES	RENSHAW	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
ReB:							
RENSHAW LOAM, 3 TO 6 PERCENT SLOPES	RENSHAW	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
Rn:							
RENSHAW LOAM, GRAVELLY SUBSTRATUM	RENSHAW	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
	RENSHAW (less than 40% gravel)	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
Rs:							
RENSHAW LOAM, SANDY SUBSTRATUM	RENSHAW	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	RENSHAW, GR. SUBSTRATUM	No	---	---	---	---	---
	SIOUX	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
Rt:							
RENSHAW LOAM, TILL SUBSTRATUM	RENSHAW	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
Ry:							
RYAN SILTY CLAY LOAM	RYAN	Yes	drainageway	2B3	YES	NO	NO
	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	CHANNEL	---	---	---	---	---	---
	RAUVILLE	Yes	oxbow	2B3,3	YES	NO	YES
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
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North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Rz:							
RYAN AND LAMOURE SILTY CLAY LOAMS	RYAN	Yes	flood plain	2B3	YES	NO	NO
	LAMOURE	Yes	flood plain	2B3	YES	NO	NO
	LAMOURE, SALINE	Yes	flood plain	2B3	YES	NO	NO
	RAUVILLE	Yes	oxbow	2B3,3	YES	NO	YES
	CHANNEL	---	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO
Se:							
SERDEN-HAMAR SANDS	SERDEN	No	---	---	---	---	---
	HAMAR	No	---	---	---	---	---
	CLAIRE	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	VENLO	Yes	depression	2B2	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
SoB:							
SIOUX GRAVELLY LOAM, 0 TO 6 PERCENT SLOPES	SIOUX	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
SoE:							
SIOUX GRAVELLY LOAM, 6 TO 25 PERCENT SLOPES	SIOUX	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	ARVILLA	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	CLONTARF	No	---	---	---	---	---
Sp:							
SPOTTSWOOD LOAM	SPOTTSWOOD	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
Sr:							
SPOTTSWOOD LOAM, SANDY SUBSTRATUM	SPOTTSWOOD	No	---	---	---	---	---
	FORDVILLE	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
	WARSING	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
Ss:							
STIRUM SANDY LOAM	STIRUM	Yes	flat	2B3	YES	NO	NO
	LEMERT	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	LETCHER	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---
St:							
SVEA LOAM	SVEA	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	CRESBARD	No	---	---	---	---	---
	PARNELL	Yes	depression	3,2B3	YES	NO	YES
	WYARD	No	---	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
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Benson, Eddy, Nelson Counties,
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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Su:							
SVEA LOAM, COBBLY VARIANT	SVEA VARIANT	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	SPOTTSWOOD	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
SvA:							
SVEA-BARNES LOAMS, 0 TO 3 PERCENT SLOPES	SVEA	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	EMRICK	No	---	---	---	---	---
	WYARD	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
SvB:							
SVEA-BARNES LOAMS, 3 TO 6 PERCENT SLOPES	SVEA	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	drainageway	2B3	YES	NO	NO
	WYARD	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
SwC:							
SVEA-BUSE-BARNES LOAMS, 6 TO 9 PERCENT SLOPES	SVEA	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	BUSE	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	HAMERLY	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	drainageway	2B3	YES	NO	NO
Sx:							
SVEA-CRESBARD LOAMS	SVEA	No	---	---	---	---	---
	CRESBARD	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	drainageway	2B3	YES	NO	NO
	CAVOUR	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
Sz:							
SWENODA-EMBDEN FINE SANDY LOAMS	EMBDEN, LOAMY SUBSTRATUM	No	---	---	---	---	---
	SWENODA	No	---	---	---	---	---
	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	EGELAND	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	EMBDEN	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Tf:							
TIFFANY SANDY LOAM	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	WYNDMERE	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	VENLO	Yes	depression	2B2	YES	NO	NO
	ARVESON	Yes	depression	2B3	YES	NO	NO
	EMBDEN	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
Tg:							
TIFFANY FINE SANDY LOAM, TILL SUBSTRATUM	TIFFANY	Yes	depression	2B3,3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	WYNDMERE	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
Tn:							
TOLNA LOAM	TOLNA	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	BINFORD	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	WALUM	No	---	---	---	---	---
To:							
TONKA SILT LOAM	TONKA	Yes	depression	2B3,3	YES	NO	YES
	HAMERLY	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
	PARNELL	Yes	depression	3,2B3	YES	NO	YES
Ts:							
TOTTEN SANDY LOAM	TOTTEN	Yes	flat	2B3	YES	NO	NO
	WYRENE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	LEMERT	No	---	---	---	---	---
	TOTTEN L	Yes	flat	2B3	YES	NO	NO
	TOTTEN L, WET	Yes	drainageway	2B3,3	YES	NO	YES
Tt:							
TOTTEN LOAM	TOTTEN	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	TOTTEN L, WET	Yes	drainageway	2B3,3	YES	NO	YES
	TOTTEN SL	Yes	flat	2B3	YES	NO	NO
	WARSING	No	---	---	---	---	---
Tu:							
TOTTEN LOAM, VERY WET	TOTTEN	Yes	depression	2B3	YES	NO	NO
	BORUP VPD	Yes	depression	2B3,3	YES	NO	YES
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	TOTTEN L	Yes	flat	2B3	YES	NO	NO
Tv:							
TOTTEN LOAM, TILL SUBSTRATUM	TOTTEN	Yes	flat	2B3	YES	NO	NO
	TOTTEN, WET	Yes	drainageway	3,2B3	YES	NO	YES
	TOTTEN SL	Yes	flat	2B3	YES	NO	NO
	DIVIDE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
TwA:							
TOWNER FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	TOWNER	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	KRATKA	Yes	flat	2B3	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Benson, Eddy, Nelson Counties,
North Dakota

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
TwB:							
TOWNER FINE SANDY LOAM, 3 TO 6 PERCENT SLOPES	TOWNER	No	---	---	---	---	---
	MADDOCK	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	EMRICK	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
Tx:							
TOWNER-DICKEY FINE SANDY LOAMS	TOWNER	No	---	---	---	---	---
	DICKEY	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	MADDOCK	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	HEIMDAL	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
Va:							
VALLERS LOAM	VALLERS	Yes	flat	2B3	YES	NO	NO
	PARNELL	Yes	depression	3,2B3	YES	NO	YES
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	FRAM	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
Vn:							
VANG LOAM	VANG	No	---	---	---	---	---
	BRANTFORD	No	---	---	---	---	---
	KENSAL	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	GARDENA	No	---	---	---	---	---
Vo:							
VENLO SANDY LOAM	VENLO	Yes	depression	2B2	YES	NO	NO
	ARVESON	Yes	depression	2B3	YES	NO	NO
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	HAMAR	Yes	flat	2B3	YES	NO	NO
	WYRENE	No	---	---	---	---	---
	WYNDMERE	No	---	---	---	---	---
W:							
WATER	WATER	Yes	depression	2B3,3	YES	NO	YES
Wa:							
WAHPETON SILTY CLAY	WAHPETON	No	---	---	---	---	---
	CHANNEL	---	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
	RYAN	Yes	drainageway	2B3	YES	NO	NO
	LUDDEN	Yes	flood plain	2B3	YES	NO	NO
WbB:							
WALSH LOAM, 3 TO 6 PERCENT SLOPES	WALSH	No	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	LAMOURE	Yes	drainageway	2B3	YES	NO	NO
WbC:							
WALSH LOAM, 6 TO 9 PERCENT SLOPES	WALSH	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	LAMOURE	Yes	drainageway	2B3	YES	NO	NO

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
WcA:							
WALSH CLAY LOAM, 0 TO 3 PERCENT SLOPES	WALSH	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
WcB:							
WALSH CLAY LOAM, 3 TO 6 PERCENT SLOPES	WALSH	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	LAMOURE	Yes	drainageway	2B3	YES	NO	NO
WcC:							
WALSH CLAY LOAM, 6 TO 9 PERCENT SLOPES	WALSH	No	---	---	---	---	---
	EDGELEY	No	---	---	---	---	---
	BARNES	No	---	---	---	---	---
	VANG	No	---	---	---	---	---
	LAPRAIRIE	No	---	---	---	---	---
	LAMOURE	Yes	drainageway	2B3	YES	NO	NO
Wd:							
WALUM SANDY LOAM	WALUM	No	---	---	---	---	---
	BINFORD	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
We:							
WALUM SANDY LOAM, GRAVELLY SUBSTRATUM	WALUM	No	---	---	---	---	---
	WALUM, SANDY SUBSTRATUM	No	---	---	---	---	---
	TOLNA	No	---	---	---	---	---
	BINFORD	No	---	---	---	---	---
Wf:							
WARSING LOAM	WARSING	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
	WARSING, SANDY SUBSTRATUM	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
Wg:							
WARSING LOAM, SANDY SUBSTRATUM	WARSING	No	---	---	---	---	---
	WARSING, >40% GR. SUBSTRA.	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
Wm:							
WARSING LOAM, TILL SUBSTRATUM	WARSING	No	---	---	---	---	---
	RENSHAW	No	---	---	---	---	---
	EMRICK	No	---	---	---	---	---
	WARSING, GRAVELLY SUBSTRATUM	No	---	---	---	---	---
	DIVIDE	No	---	---	---	---	---
Wn:							
WYARD LOAM	WYARD	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	HAMERLY	No	---	---	---	---	---
	SVEA	No	---	---	---	---	---
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	EMRICK	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Wo:							
WYNDMERE SANDY LOAM	WYNDMERE	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	HAMAR	Yes	flat	2B3	YES	NO	NO
	CLONTARF	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
	STIRUM	Yes	flat	2B3	YES	NO	NO
	LOHNES	No	---	---	---	---	---
Wp:							
WYNDMERE SANDY LOAM, TILL SUBSTRATUM	WYNDMERE	No	---	---	---	---	---
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	SWENODA	No	---	---	---	---	---
	KRATKA	Yes	flat	2B3	YES	NO	NO
	EMRICK	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	HECLA	No	---	---	---	---	---
Wr:							
WYRENE SANDY LOAM	WYRENE	No	---	---	---	---	---
	ARVESON	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	CLONTARF	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	LOHNES	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
Ws:							
WYRENE SANDY LOAM, TILL SUBSTRATUM	WYRENE	No	---	---	---	---	---
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	EMRICK	No	---	---	---	---	---
	FRAM	No	---	---	---	---	---
	LOHNES	No	---	---	---	---	---
	VALLERS	Yes	flat	2B3	YES	NO	NO
Wt:							
WYRENE-TOTTEN SANDY LOAMS	WYRENE	No	---	---	---	---	---
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	OSAKIS	No	---	---	---	---	---
	HAMAR	Yes	flat	2B3	YES	NO	NO
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	WYNDMERE	No	---	---	---	---	---

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.
Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or

2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:

   a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or

   b. poorly drained or very poorly drained and have either:

      (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in),

      or for other soils

      (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or

      (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or

3. Soils that are frequently ponded for long duration or very long duration during the growing season, or

4. Soils that are frequently flooded for long duration or very long duration during the growing season.